

FIG. 1A

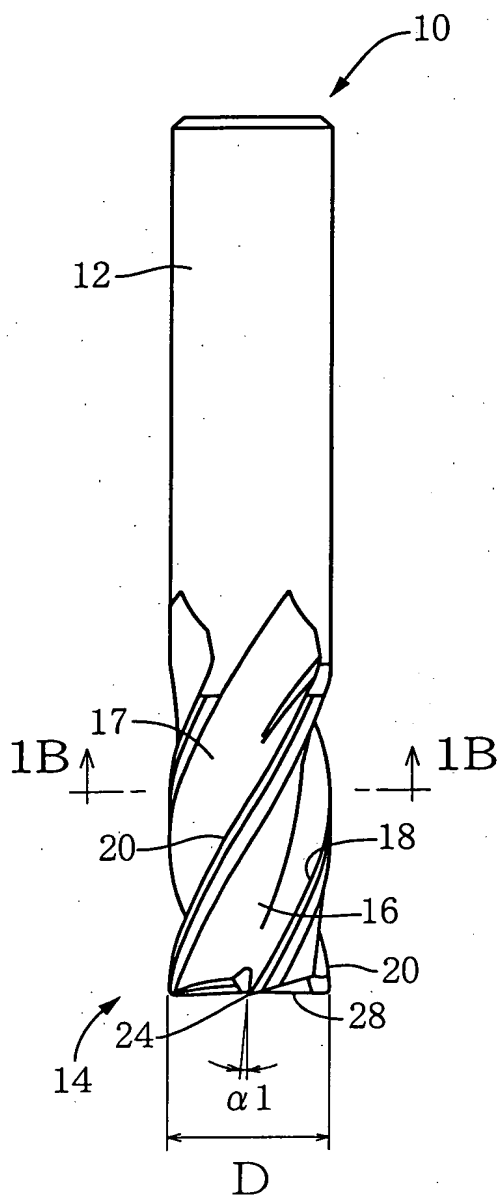


FIG. 1B

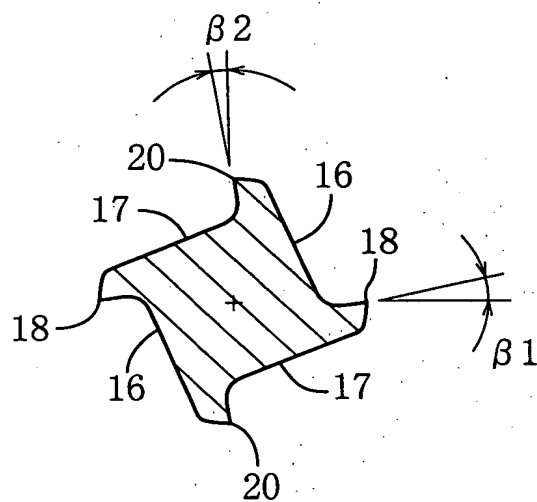


FIG. 1C

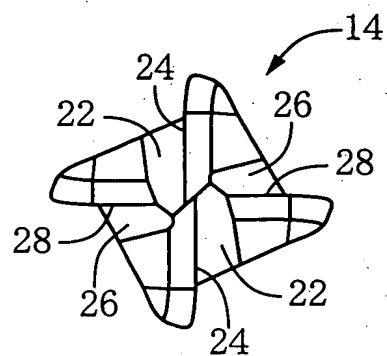


FIG. 1D

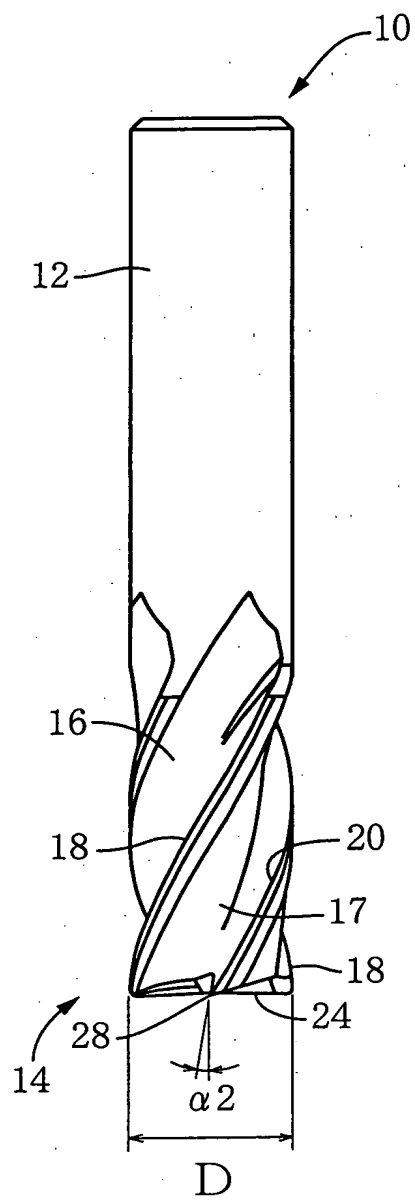


FIG. 2A

FACTORS	LEVEL 1	LEVEL 2
A: RADIAL RAKE ANGLE	$\beta 1=6^{\circ}, \beta 2=0^{\circ}$	$\beta 1=15^{\circ}, \beta 2=6^{\circ}$
B: AXIAL RAKE ANGLE	$\alpha 1=0^{\circ}, \alpha 2=6^{\circ}$	$\alpha 1=3^{\circ}, \alpha 2=3^{\circ}$
C: CORE DIAMETER	cd1=0.6D, cd2=0.7D	cd1=0.65D, cd2=0.65D
D: MATERIAL	CEMENTED CARBIDE a	CEMENTED CARBIDE b

FIG. 2B

TRIAL PRODUCTS	A	B	A×B	C	A×C	e	D
No 1	1	1	1	1	1	1	1
No 2	1	1	1	2	2	2	2
No 3	1	2	2	1	1	2	2
No 4	1	2	2	2	2	1	1
No 5	2	1	2	1	2	1	2
No 6	2	1	2	2	1	2	1
No 7	2	2	1	1	2	2	1
No 8	2	2	1	2	1	1	2

FIG. 2C

TRIAL PRODUCTS	RADIAL RAKE ANGLE		AXIAL RAKE ANGLE		CORE DIAMETER		MATERIAL
	$\beta 1$	$\beta 2$	$\alpha 1$	$\alpha 2$	cd1	cd2	
No 1	$6^{\circ}$	$0^{\circ}$	$0^{\circ}$	$6^{\circ}$	0.6D	0.7D	CEMENTED CARBIDE a
No 2	$6^{\circ}$	$0^{\circ}$	$0^{\circ}$	$6^{\circ}$	0.65D	0.65D	CEMENTED CARBIDE b
No 3	$6^{\circ}$	$0^{\circ}$	$3^{\circ}$	$3^{\circ}$	0.6D	0.7D	CEMENTED CARBIDE b
No 4	$6^{\circ}$	$0^{\circ}$	$3^{\circ}$	$3^{\circ}$	0.65D	0.65D	CEMENTED CARBIDE a
No 5	$15^{\circ}$	$6^{\circ}$	$0^{\circ}$	$6^{\circ}$	0.6D	0.7D	CEMENTED CARBIDE b
No 6	$15^{\circ}$	$6^{\circ}$	$0^{\circ}$	$6^{\circ}$	0.65D	0.65D	CEMENTED CARBIDE a
No 7	$15^{\circ}$	$6^{\circ}$	$3^{\circ}$	$3^{\circ}$	0.6D	0.7D	CEMENTED CARBIDE a
No 8	$15^{\circ}$	$6^{\circ}$	$3^{\circ}$	$3^{\circ}$	0.65D	0.65D	CEMENTED CARBIDE b

# FIG. 3

TYPE OF TEST	PERFORMANCE TEST	DURABILITY TEST
WORK MATERIAL	SUS 304	
CUTTING PATTERN	SLOTTING	
CUTTING FLUID	WATER SOLUBLE FLUID	
NUMBER OF REVOLUTIONS	1900~4852min <sup>-1</sup>	4852min <sup>-1</sup>
FEED RATE	380~970mm/min	776mm/min
DEPTH OF CUT (AXIAL DEPTH)	0.5D~1D	1D

FIG. 4

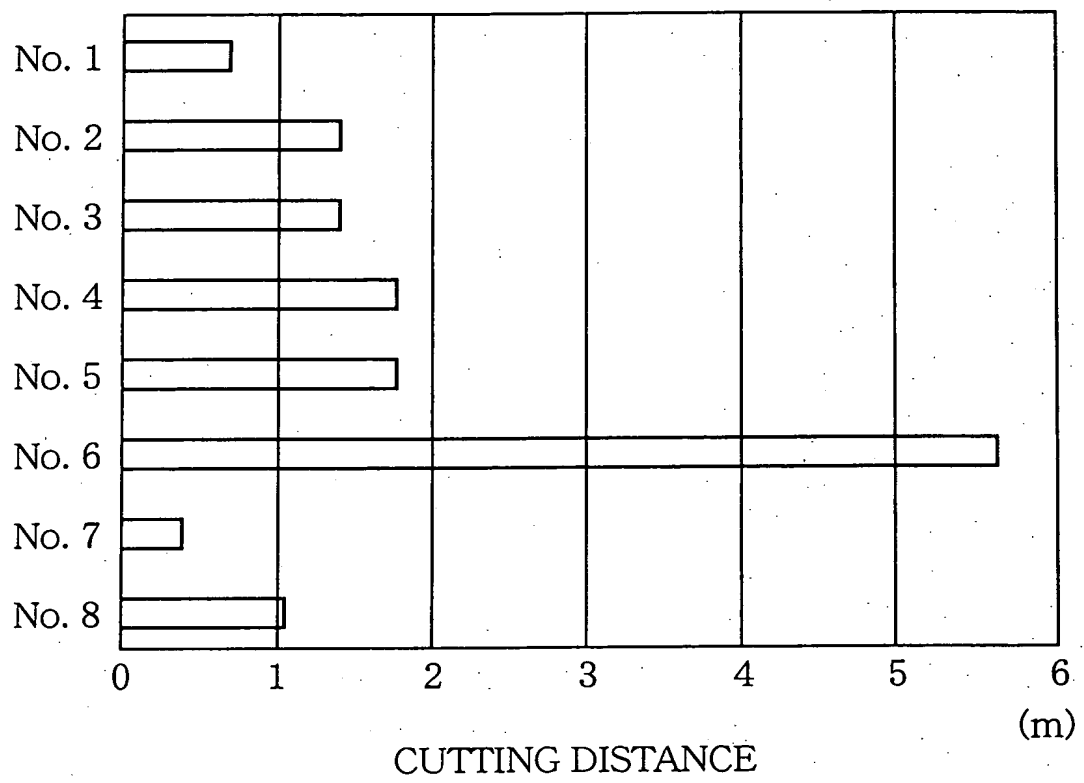


FIG. 5

FACTORS	SUM OF SQUARES	DEGREE OF FREEDOM	VARIANCE	F 0	PROBABILITY
RADIAL RAKE ANGLE (A)	1.531	1	1.531	1.22	0.385
AXIAL RAKE ANGLE (B)	3.001	1	3.001	2.39	0.262
CORE DIAMETER (C)	3.92	1	3.92	3.122	0.219
A × B	6.125	1	6.125	4.878	0.158
A × C	1.531	1	1.531	1.22	0.385
ERROR (e)	2.511	2	1.256		
SUM	18.62	7			

# FIG. 6

	ENDMILL OF THE INVENTION	ENDMILL OF COMPARATIVE EXAMPLE I	ENDMILL OF COMPARATIVE EXAMPLE II
NUMBER OF FLUTES	4	3	4
RADIAL RAKE ANGLE	$\beta 1=15^{\circ}, \beta 2=6^{\circ}$	$\beta 1=18^{\circ}, \beta 2=18^{\circ}$	$\beta 1=6^{\circ}, \beta 2=6^{\circ}$
AXIAL RAKE ANGLE	$\alpha 1=0^{\circ}, \alpha 2=6^{\circ}$	$\alpha 1=2^{\circ}, \alpha 2=2^{\circ}$	$\alpha 1=3^{\circ}, \alpha 2=3^{\circ}$
CORE DIAMETER	cd1=0.65D, cd2=0.65D	cd1=0.45D, cd2=0.45D	cd1=0.67D, cd2=0.67D
HELIX ANGLE	40°	35°	50°

# FIG. 7

